

What is claimed is:

1. An apparatus for separating and beating a material, comprising:

a conical stationary shell having a first beating section,

5 a ring-shaped stationary disc provided outside the conical stationary shell and having a second beating section,

a conical rotor including a third beating section facing said first beating section to create a gap between the first beating section and the third beating section for the material to
10 pass therethrough,

a ring-shaped rotor disc provided outside the conical rotor and including a fourth beating section facing said second beating section to create a gap between the second beating section and the fourth beating section for the material to pass therethrough,
15 and

a rotational shaft attached to the conical rotor for supporting and rotating the same.

2. An apparatus according to claim 1, wherein the second beating
20 section of the ring-shaped stationary disc and the fourth beating section of the ring-shaped rotor disc are machined discs.

3. An apparatus according to claim 1, wherein the ring-shaped stationary disc is connected to and moved independently relative
25 to the conical stationary shell parallel to a longitudinal direction of the rotational shaft.

4. An apparatus according to claim 1, wherein the ring-shaped rotor disc is connected to and moved independently relative to

the conical rotor parallel to a longitudinal direction of the rotational shaft.

5. An apparatus according to claim 1, wherein the conical type stationary shell is divided into at least an upstream section and a downstream section with respect to a material flow, and the conical rotor is divided into at least an upstream section and a downstream section with respect to the material flow.
- 10 6. An apparatus according to claim 1, wherein said first and third beating sections face each other so that a distance between the first and third beating sections is gradually decreased along a flow direction of the material.
- 15 7. An apparatus according to claim 6, wherein said gap between the second and fourth beating sections is narrower than the distance between the first and third beating sections.
- 20 8. An apparatus according to claim 1, wherein said apparatus is a refiner for papermaking.
9. An apparatus according to claim 1, wherein said apparatus is an agitating apparatus for papermaking.